CLAIMS

1. Method for analyzing a patient tissue sample, whose genomic and/or proteomic and/or epigenomic and/or biophysical properties are essentially preserved, to determine its diseased tissue fractions, in which

(a) sections are prepared from the tissue sample,

(b) at least one of these sections is subjected to a histological/cytological examination, while at least one other section is subjected to nonmorphological analytical testing,

characterized by the fact that

(c) in the histological/cytological examination, at least the quantitative fraction of the diseased tissue or diseased cells and/or some other morphological aspect is determined in the tissue sample by means of an image processing system, and

(d) at least the determined quantitative fraction and/or other morphological aspect is used as a reference quantity on which the evaluation of the results of the nonmorphological analytical testing is based.

2. Method for analyzing a patient tissue sample, whose genomic and/or proteomic and/or epigenomic and/or biophysical properties are essentially preserved, to determine its diseased tissue fractions, in which

(a) one or more samples are taken from the tissue sample,

(b) and at least one portion (divided sample) of the sample is subjected to a histological/cytological examination, and at least one other portion (divided sample) of the sample is subjected to nonmorphological analytical testing,

characterized by the fact that

(c) in the histological/cytological examination, at least the quantitative fraction of the diseased tissue or diseased cells and/or some other morphological aspect is determined in the tissue sample or sample by means of an image processing system, and

(d) at least the determined quantitative fraction and/or other morphological aspect is used as a reference quantity on which the evaluation of the results of the nonmorphological analytical testing is based.

3. Method in accordance with Claim 2, characterized by the fact that the sample of the tissue sample is taken by a core sampler, by aspiration, or by scrape preparation.

4. Method in accordance with any of the preceding claims, characterized by the fact that in the histological/cytological examination, the appearance and/or the distribution pattern of the diseased tissue and/or diseased cells in the tissue sample is additionally determined and is used as the basis for evaluating the results of the nonmorphological analytical testing.

5. Method in accordance with any of the preceding claims, characterized by the fact that the sections or the samples are prepared or taken directly from the fresh tissue sample.

6. Method in accordance with any of the preceding claims, characterized by the fact that the tissue sample is frozen before the sections are prepared or before the samples are taken.

7. Method in accordance with any of Claims 1 to 6, characterized by the fact

that the tissue sample is mounted on a slide and frozen immediately after it has been removed from a patient, that sections of the frozen tissue sample are then prepared with a microtome, and that the sections are then sent for histological/cytological examination or for nonmorphological analytical testing.

8. Method in accordance with Claim 7, characterized by the fact that after the sections have been prepared, the tissue sample is left on the slide, so that it is available for the preparation of new sections.

9. Method in accordance with any of Claims 1 to 8, characterized by the fact that the slide on which the tissue sample is mounted is designed in such a way that it can be reproducibly placed in the microtome, so that the tissue sample has the same relative orientation to the microtome in each preparation of sections.

10. Method in accordance with any of Claims 1 to 9, characterized by the fact that at least two sections are used for histological/cytological examination, and that these sections are selected in a way that ensures that the section or sections sent for nonmorphological analytical testing were located between these sections in situ.

11. Method in accordance with any of Claims 2 to 9, characterized by the fact that the divided samples that are sent for histological/cytological examination are selected to ensure that the one or more divided samples sent for nonmorphological analytical testing were located between these divided samples in situ.

12. Method in accordance with any of the preceding claims, characterized by

the fact that the method is used for intraoperative or perioperative clinical diagnosis or experimental pathological analysis.

13. Method in accordance with any of the preceding claims, characterized by the fact that the method used in nonmorphological analytical testing is a method for detecting genomic DNA, cDNA, mRNA, the epigenomic methylation pattern, proteins, viral or bacterial nucleic acids, or other biomolecules, or a method for determining the biophysical characteristics of a sample.

14. Method in accordance with any of the preceding claims, characterized by the fact that the nonmorphological analytical testing includes the determination of a quantity that makes it possible to determine the fraction of diseased tissue and/or other tissue components in the tissue sample, and that the fraction thus determined is additionally used quantitatively as the basis of the evaluation of the results of the nonmorphological analysis.

15. Method in accordance with any of the preceding claims, characterized by the fact that a microarray or a suspension array is used as part of the nonmorphological analytical testing.

16. Method in accordance with any of the preceding claims, characterized by the fact that the biomolecules to be detected as part of the nonmorphological analytical testing are subjected to a labeling step.

17. Method in accordance with any of the preceding claims, characterized by the fact that the nucleic acids to be detected as part of the nonmorphological analytical testing

are subjected to an amplification step.

18. Method in accordance with any of the preceding claims, characterized by the fact that the histological/cytological examination includes at least one staining step.

19. Method in accordance with any of the preceding claims, characterized by the fact that the histological/cytological examination includes at least one immunohistochemical step and/or in situ hybridization step.

20. Method in accordance with any of the preceding claims, characterized by the fact that several sections are each subjected to different histological/cytological tests.

21. Use of a method in accordance with any of the preceding claims to develop a tumor data bank.

22. Use of a method in accordance with any of the preceding claims to develop individualized cancer therapies.

23. Use of a method in accordance with any of the preceding claims to adjust a patient to an individualized cancer therapy.